A.D. 1866, 18*th* AUGUST. N° 2123.

Buoys for Saving Life and Property at Sea.

LETTERS PATENT to William Edward Newton, of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Civil Engineer, for the Invention of "IMPROVED APPARATUS FOR SAVING LIFE AND PROPERTY IN CASES OF SHIPWRECK."—A communication from abroad by François Frédéric de Clossmann, of Rue St. Sebastien, Paris, in the Empire of France.

Sealed the 18th January 1867, and dated the 18th August 1866.

PROVISIONAL SPECIFICATION left by the said William Edward Newton at the Office of the Commissioners of Patents, with his Petition, on the 18th August 1866.

I, WILLIAM EDWARD NEWTON, of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Civil Engineer, do hereby declare the nature of the said Invention for "IMPROVED APPARATUS FOR SAVING LIFE AND PROPERTY IN CASES OF SHIPWRECK," to be as follows:—

The object of this Invention is to save from loss in cases of shipwreck by means of hollow floating vessels or buoys which are hermetically closed so as to keep out water from all kinds of valuable objects, such as gold and silver articles, watches, precious stones, valuable commercial documents, and title deeds. According to the dimensions of the floating vessels or buoys, their

floating power will be such that they may be also made to support in the water one or more persons. Every passenger may therefore by means of one of these buoys not only save himself, but also his most valuable articles, and even if the person should perish the articles contained in the buoy would be saved. The buoys are constructed of wood or some other light but strong materials which will not be damaged by exposure to sea water, and are made somewhat in the form of a barrel with rounded ends or of such other form as will offer the greatest possible resistance to the action of the sea and waves, and will give the greatest possible floating power. Inside the buoy is a metal shell or vessel which is capable of being closed hermetically; in this shell or vessel any objects of value may be placed, in order to keep the articles from moving or knocking about in the vessel, and thus becoming broken or damaged, a metal or other plate is mounted on the lower end of a screwed spindle which passes through a nut in a hollow vertical tube supported at its upper end by a horizontal bar which extends across the inner shell or vessel. By this arrangement the articles to be saved will be placed and secured in the lower part of the buoy, and such part being thus made the heaviest will always be lowermost. The steadying plate will also ensure that the buoy be not too heavily weighted, and that a sufficient power of flotation to support in addition one, two, or more persons will be obtained. The edges of the cover of the buoy, which is made of a hemispherical or convex form are received in a groove provided with a well greased, hempen, or other packing, so that when the cover is shut and closed down the interior will be hermetically closed. The cover is held down and secured by means of screws. The buoy is surrounded and covered externally by a series of cork rings which are secured together by means of wood screws. This cork envelope is covered with some strong fabric, and is protected externally by a network of cordage. The top and bottom part of the buoy are connected together by strong cords or ropes, and there are also attached to the buoy several loose cords or ropes whereby the buoy may be secured or any ship-wrecked persons may hold on to the buoy. Any convenient number of these buoys in which valuable articles are secured are placed in a large vertical cylinder fixed in any convenient part of the ship. The lower part of this cylinder is pierced with holes to admit water when water enters the ship, when the water enters this vessel it will float out the safety buoys with their contents, which will thereby be left to float on the water when the ship sinks. The upper part of this large vertical cylinder is covered by a life boat, or the cover itself may be formed of two parts hinged together and provided with water-tight compartments, so that when this cover is floated off it will open

out and form a safety boat or raft capable of supporting several persons. In some of the water-tight compartments are placed cases containing food and water.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said William Edward Newton in the Great Seal Patent Office on the 18th February 1867.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, William Edward Newton, of the Office for Patents, 66, Chancery Lane, in the County of Middlesex, Civil Engineer, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Eighteenth day of August, in the year of our Lord One thousand eight hundred and sixty-six, in the thirtieth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said William Edward Newton, Her special licence that I, the said William Edward Newton, my executors, administrators, and assigns, or such others as I, the said William Edward Newton, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "Improved Apparatus for Saving Life and Property in Cases of Shipwreck," being a communication from abroad, upon the condition (amongst others) that I, the said William Edward Newton, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said William Edward Newton, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the Drawing hereunto annexed and to the letters and figures marked thereon (that is to say) :—

The object of the present Invention is to save by means of caissons or buoys hermetically sealed objects of value, such as gold or silver, precious stones, commercial papers, titles, documents, &c.

According to the dimensions of the buoys their floating power is such that they can even support or maintain at the surface of the water one or more human beings; every passenger could then by means of one of these buoys be sure of a means of safety for himself and the more valuable of his goods; even supposing that the passenger should perish the buoy will always preserve that which has been confided to it, can then therefore be returned to the family of the deceased. The buoys are constructed of materials upon which it is known that dependance can be placed, and which are arranged together in such a manner as to form a structure uniting the greatest possible floating power with a form that will offer the most resistance to the action of the sea and the force of the waves. In the interior of the buoy is a metallic chamber which is hermetically shut, and in which are placed the valuables which are to be saved. A circular disc attached to the extremity of a screw prevents these articles from coming violently into contact with each other by maintaining them in their proper positions. This mechanism is extremely simple, and as it limits the space that is to be filled it gives the buoy such great floating power that it is capable of supporting one or more persons at the surface of the water.

On board steamships the buoys should be placed in such a manner that in case of the vessel foundering from any cause the influx of the water into the chambers or wells in which they are enclosed will raise them up on account of their specific gravity being less than that of the water. The column of compressed air contained in the well will raise up the outer covering, and thus render the buoys free to float about in the vicinity of the wreck. The covering of the chamber containing the buoys may be constructed in such a manner that it may be made to open itself by means of hinges, and to constitute when these two parts are reunited a sort of unsinkable lifeboat, thus affording the shipwrecked mariners a valuable means of safety. The weight of the caissons, food cans, water tanks, &c., that are shut up in the chamber should be so distributed as to effect the opening of the chamber at the moment that the wreck takes place.

In the accompanying Drawing Fig. 1 represents a vertical section of a buoy constructed according to the present Invention. This buoy is composed of a metal receiver surmounted by an arched covering K which enters into a groove, at the bottom of which is tow and fat, in order to be able to shut it hermetically, so that the water shall not enter; this covering is retained in its place and pressed down by means of the thumbscrews *e*, *e*, of which there are six. In the interior of the chamber is a tube B, the extremity of which carries a ring having a female thread, into which the screw R enters, and at the end of this

screw is a wooden disc T. The top of the tube B turns in an iron cross head X, which is retained in its place by two small projecting pieces of iron rivetted to the receiver. There are at the two extremities of this cross head two small edges which prevent it from turning when the disc is being screwed up. This little apparatus, which is easily taken out, serves for the stowage at the bottom of the chamber of objects of value, such as gold, silver, jewels, deeds, &c. It is necessary to put between the objects at the bottom of the chamber and the disc I a layer of paper, hemp, or tow. The metallic receiver is surrounded with hoops of cork A strongly united by long wooden screws. The top C of this outer covering is detachable at the same level as the covering of the inner chamber to allow of the entrance or exit of the objects contained in the buoy. The entire outer covering of cork is surrounded with very tightly pressed network of cord D. The network that surrounds the cork lid laps over the network of the other part some little distance. The union of these two parts is made by means of seven very strong ligatures of cord V. Attached to the top of the buoy are five loose cords H, which serve as a means of catching hold of the buoy at sea, or for something for a drowning person to lay hold of.

These buoys are intended principally for the use of the passengers, and to contain above all gold, silver, papers, &c. A buoy intended to carry heavy charges is shewn at Fig. 3, and is constructed in the same manner as that just described. It only differs in the proportion of the diameter to the height.

Fig. 2 is a horizontal sectional view of the buoy shewn at Fig. 1 taken at the line 1, 2, of that Figure. In the construction of this buoy great solidity is united with exceeding buoyancy and lightness. The inner chamber, on account of its form, is calculated to offer great resistance, notwithstanding the thinness of the metal employed in its construction. The cork that surrounds it preserves it from damage by shocks, and, lastly, the network of cord prevents the cork from being injured by coming into contact with anything calculated to do it any harm. The top of the cork case, which is made to lift up, can be connected with the other part by means of hinges and a metallic fastening, but at the same time the above-mentioned ligatures should not be wholly dispensed with.

For the strongest kinds of buoys the covering of the chamber should not be of the entire diameter, and instead of the thumbscrews above mentioned (which are more convenient for the passengers) a regular screw nut may be substituted, which can be screwed down tighter by means of a key.

Fig. 3 represents the section of a well or safety chamber or store room for

the valuables and the lifeboat. This store room is composed of a large iron cylinder R, the base of which is rivetted to the keel at about twenty inches from the bottom. It is pierced with holes for the admission of the water. The top of this cylinder should reach above the deck, and if possible quite clear of the forecastle and poop. This cylinder, which may be named the "safety store" for valuable articles, is made to contain the buoys B, the number of which would vary according to their sizes. This cylinder can have either one or two doors at will, or can receive its cargo from the opening at the top. The top of this safety store is closed by the lifeboat O, which is made entirely of iron; it is divided into two equal parts, which are united at the bottom by three strong hinges D. The top part is attached by holding cords to some rings. X is the deck of the boat, which is also in iron; K are iron partitions forming four compartments, which if made with care should be perfectly water-tight; M, M, are the water tanks; U, U, the biscuit boxes, which are all made of iron; they should all be firmly stowed away into the positions that they should occupy. L is a catch that hooks on to an iron bar T which is held by a spring when the boat is opened, and helps to maintain it in this position; H is an iron ball firmly fixed to one of the two halves of the boat by rivetted bands of iron; it is to this ball that the cords are attached to hoist the boat out of the safety store. V, V, are the bands of iron that form a groove round the boat; these grooves are filled with tow. In the Drawing the sizes of these bands is somewhat exaggerated. They should have as little play as possible, so that the boat should not move with the motion of the vessel. The top of the safety store should enter freely into this groove.

Fig. 4 is a horizontal sectional view taken at the line 3, 4, of Fig. 3 of the safety store and the life boat; Fig. 5 is a plan view of the entire life boat. The iron bordering I, lined with wood, surrounds the boat; it is necessary to put an india-rubber band on this bordering either inside or out in order to keep the water out of the safety store when the boat is closed. The four panels A, A, serve as a kind of hatchway into the four close compartments; they are filled with tow, and covered with strong canvas, and battened down with hoop iron, so that the water shall not find its way into the compartments. Y, Y, Y, are three pieces of wood to serve as a mast; they should be jointed so that they can be fixed together; E is an oar properly secured in the place where it can be put. All these pieces are fixed to the deck, as are also other accessories less necessary that are not indicated, but which would be fixed to the deck or in the boat. The little iron cylinder C is to receive the mast; a cord for holding the mast is attached to the ball H. When any accident takes place the passengers would seize hold of the buoys nearest to them, and

if they could contrive to keep above water by means of the buoys they would have some chance of being picked up by passing ships. If the wreck took place near the land they would wait for help or be drawn in to the shore; but whatever should be the result the valuables would not be lost, the strength of the buoys would resist the action of the sea for a considerable time, and it is highly probable that the buoys would be found, and the papers by giving the proper clue could easily be restored to the owners. The same thing could not be done with the immense riches that the large ships and above all the mail steamers carry, the weight of the silver frequently reaching thirty tons. In a wreck in which the ship went down at once it would be impossible to get out such a considerable weight from the hold, and even if they were encased in the improved buoys they would sink with the ship. It is to avoid that that the safety store provided with the life boat on the top is employed; thus a steamer having all its valuables placed in the buoys and then in the safety store, on the top of which is the life boat, should a wreck take place and the ship sink suddenly the water will quickly enter the hold and ascend into the safety store by means of the holes pierced in the bottom; directly the water effects an entrance the buoys will begin to float and push up the life boat, that is on the top, the groove of which plays freely, and there is nothing to retain it. This boat, on account of the immersion, would find itself entirely free and would fall directly into the water which at this moment would cover the vessel, at the same time as no obstacle would retain the buoys they would also float freely. At the first moment the quartermasters should place themselves upon the boat and should keep themselves there by means of cords placed there; at the right moment, when the boat should be disengaged, and should there be no danger of getting entangled with any part of the rigging, they should cut the two fastenings that hold the boat, which by the position of its ballast would open itself immediately; then by the help of their oars they could pick up the shipwrecked people who would be sustained on the surface of the water by means of their buoys; they would then find in the life boat not only a refuge but victuals necessary for their subsistence. The buoys should be stowed in the safety store by means of woollen cushions, which would be sufficient to avoid shaking, but would form no obstacle to the rising of the buoys. In those shipwrecks in which it happens that the vessel is abandoned before it sinks the life boat would always be useful, for there are always means of lifting it out on board ship, either with a crane or by the yards, or with a block and tackle. In case of fire, the buoys being separated from the ship by means of the safety store could not easily be injured even if the iron cylinder became red hot, as the buoys are separated from the cylinder by the woollen cushions,

and by rendering these cushions incombustible, either by a solution of alum or other means, they would thus be easily preserved.

I would remark in conclusion that instead of the three strong hinges for the lifeboat one would be sufficient and should extend the whole width of the boat. By this means great solidity would be guaranteed, and when the boat is being opened nothing could get between the two parts to prevent their locking. If instead of the straight cone which forms the top of the boat when it is shut an ogival form should be adopted it would be nearer the shape that experience shows to be the best. Notwithstanding the position of the ballast the boat at the moment that the fastenings are cut would not open completely and fasten itself underneath, but the action of the waves might do it, or the weight of the passengers at the extremities of the boat would also effect this object. It would be easy to open it quicker by means of a long and strong screw worked by gearing and fixed on the deck on one half of the boat and pressing against a strong keel of iron fixed on the other half. After having moved a certain way at the moment that it touches the keel the two halves would take a horizontal position and the boat would be open. In case of fire the safety store might be surrounded with a second cylinder of thin wrought iron, and the space between the two cylinders might be filled with some substance that is a bad conductor of heat.

Having now described the Invention, which has been communicated to me by my foreign correspondent, I claim the mode herein set forth of constructing safety buoys or caissons for saving valuable property in case of shipwreck or other accidents at sea; I also claim arranging the buoys in a well or chamber from which they will be floated out in the event of a vessel sinking as herein set forth.

In witness whereof, I, the said William Edward Newton, have hereunto set my hand and seal, the Eighth day of February, in the year of our Lord One thousand eight hundred and sixty-seven.

W. E. NEWTON. (L.S.)

Witness,

J. W. MOFFATT,
66, Chancery Lane.

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1867.

FIG. 1.

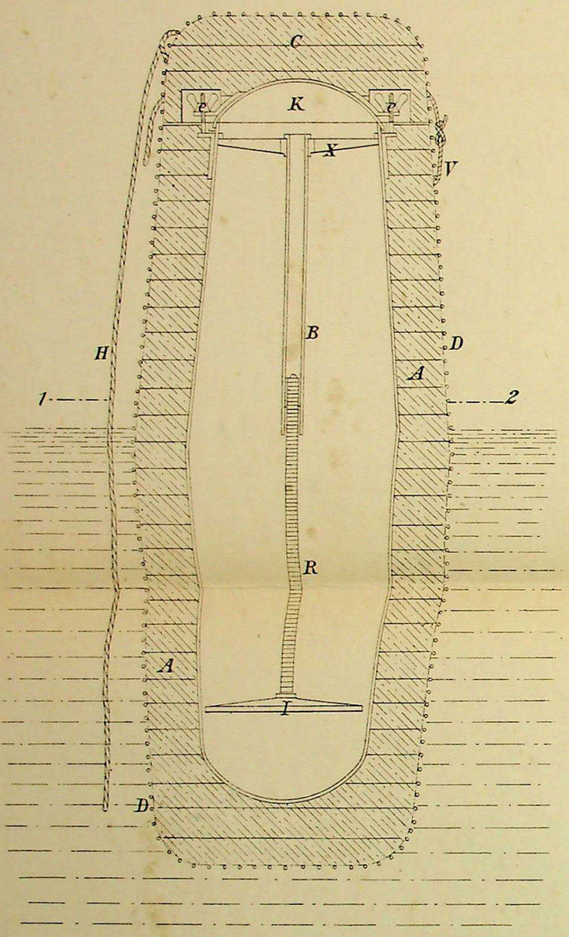


FIG. 2. $\frac{1}{3}$ Scale

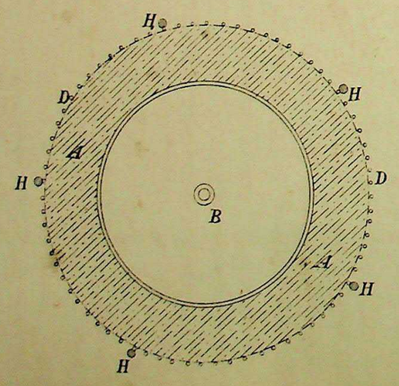


FIG. 3.

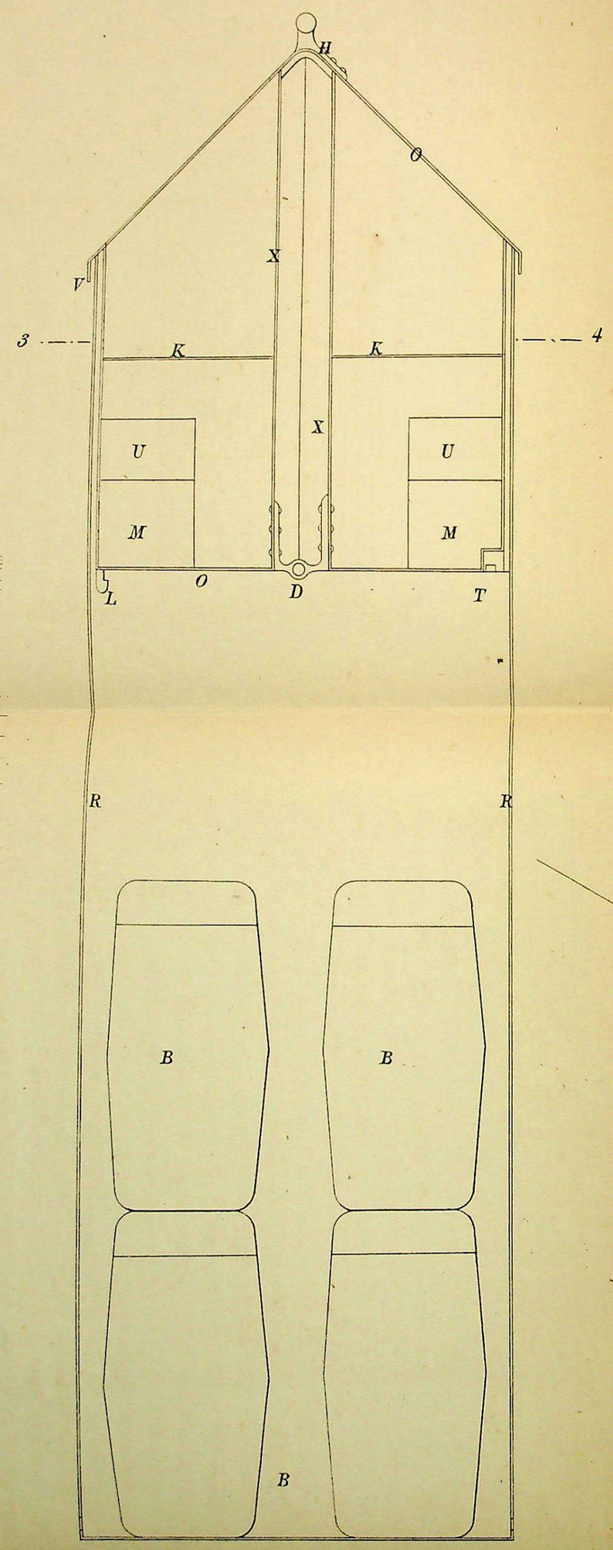


FIG. 5.

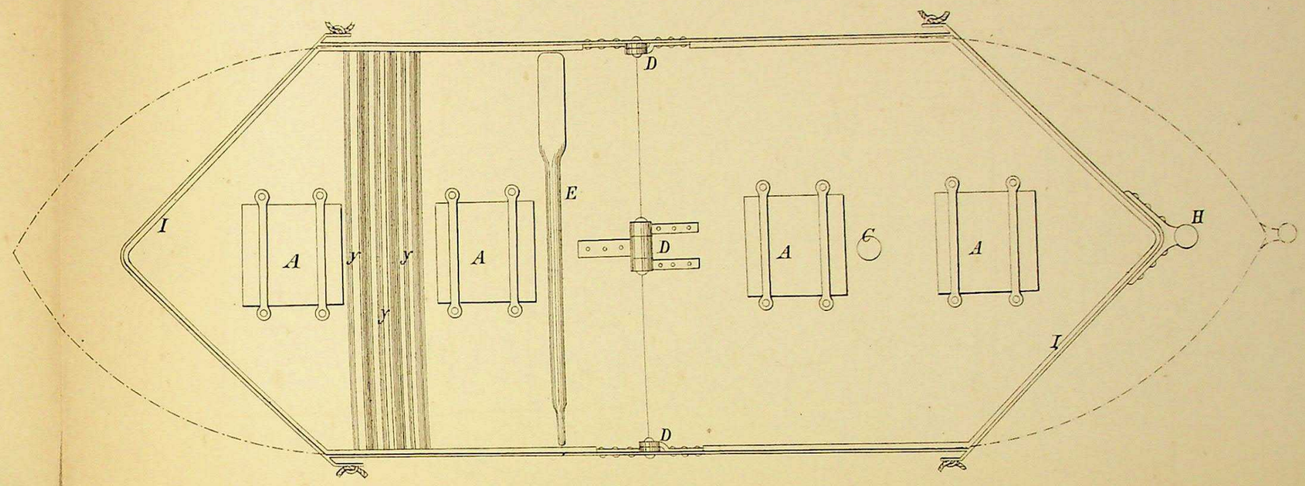
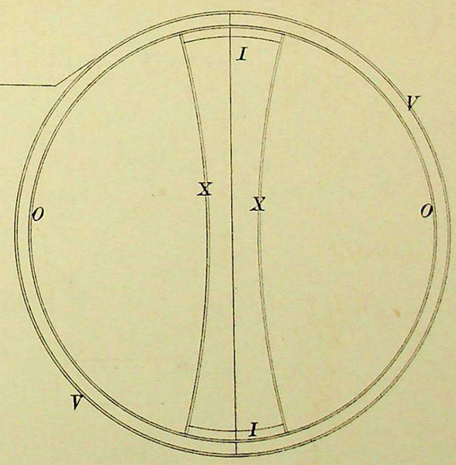


FIG. 4.

Scale of $= \frac{1}{40}$



The filed drawing is partly colored

Drawn on Stone by Maiby & Son.

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Printers to the Queen's most Excellent Majesty. 1867